

526,261

## (12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property  
Organization  
International Bureau



(43) International Publication Date  
11 March 2004 (11.03.2004)

PCT

(10) International Publication Number  
**WO 2004/020667 A1**

(51) International Patent Classification<sup>7</sup>: **C12Q 1/68**  
(21) International Application Number:  
PCT/EP2003/009980

(22) International Filing Date:  
1 September 2003 (01.09.2003)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:  
02447163.3 2 September 2002 (02.09.2002) EP  
60/421,468 25 October 2002 (25.10.2002) US

(71) Applicant (for all designated States except US): **PAM-GENE B.V.** [NL/NL]; Burgemeester Loeffplein 70a, NL-5211 RX Den Bosch (NL).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **VAN BEUNINGEN**, Marinus, Gerardus, Johannus [NL/NL]; Polderkade 27, NL-5345 RR Oss (NL). **KIEVITS**, Tim [NL/NL]; Grote Gent 2, NL-5261 BT Vught (NL).

(74) Agents: **DE CLERCQ**, Ann et al.; De Clercq, Brants & Partners, E. Gevaertdreef 10a, B-9830 Sint-Martens-Latem (BE).

(81) Designated States (*national*): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States (*regional*): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

## Declaration under Rule 4.17:

— of inventorship (Rule 4.17(iv)) for US only

## Published:

— with international search report

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: NOVEL INTEGRATED MICROARRAY ANALYSIS

(57) Abstract: The present invention relates to methods for identifying analyte nucleic acids present in a sample comprising nucleic acid molecules, said method comprising the steps of: (a) providing a porous substrate, said substrate comprising a plurality of micro-channels, wherein said micro-channels have immobilized thereon a target molecule capable of binding to an analyte present in said sample; wherein said channels are further provided with analyte amplification components, a reporter system; and said sample; (b) amplifying analyte nucleic acid molecules present within said sample; and (c) allowing binding to take place between an amplified analyte nucleic acid obtained in step (b), said target molecule immobilized onto the channels of said substrate and said reporter system, wherein said reporter system allows detecting whether binding has occurred between said target molecule and said analyte nucleic acid. The present invention further relates to the use of said methods as well as kits for carrying out said methods.

WO 2004/020667 A1